

REMARKS

Reconsideration of the application is respectfully requested. Claims 1-20 are pending and remain in this application. Claims 1, 9, 13, 15 and 17 have been amended.

Rejections Under 35 U.S.C. § 102

The Office Action has rejected claims 1-20 under 35 U.S.C. § 103 as being unpatentable over Rajski et al. U.S. Patent 6,327,687 (hereinafter “Rajski”) further in view of Rohrbaugh et al. U.S. Patent 6,067,651 (hereinafter “Rohrbaugh”). Applicant respectfully traverses this rejection. The Office Action, on pages 2-3, essentially copies text from Column 2, line 53 through Col. 3, line 18 of the Rohrbaugh specification. However, as Rohrbaugh makes clear, the vector being generated is applicable to a single fault:

More specifically, a first test vector is generated to test *for a given fault in a list of faults* to be tested (just like the first test vector generated in static compaction) [emphasis added].

Rohrbaugh, Col. 2, lines 54-57. Rohrbaugh proceeds to explain that data is added to the don't care positions in unused bit positions to see if this first test vector *can be used* to test for other faults:

However, before generating a second test vector, an attempt is made to utilize the first test vector to test for additional faults. In this regard, the unused bit positions (i.e., don't care values) may be set to either “1”s or “0”s or existing bit positions may be utilized, to the extent that the values need not be changed.

Rohrbaugh, Col. 2, lines 57-62. In contrast, the present claims, as amended, require that the test vectors be targeted at a “plurality of faults” *prior to* filling any of the non-care bits of the original test vector with repeated values. This feature is supported throughout the specification, with exemplary citations found at page 1, lines 13-15 and page 4, lines 2-9. Thus, unlike Rohrbaugh,

the test vectors in the presently pending claims are already targeted at multiple different faults prior to filling the non-care bits, which means that the non-care bits in the present claims are not filled in order to determine whether the original test vector can also be used to test more than one fault. Moreover, Rohrbaugh sets don't care bits to detect new faults and uses existing care bits if they are consistent with testing a new fault. This, however, has no bearing on having the don't care bits repeat the values of the preceding care bits in the test vector for the same scan chain since Rohrbaugh will set a don't care bit to the opposite value of a preceding care bit if that is what it takes to detect a new fault.

Note that Rohrbaugh uses the term "compacted" with an industry accepted meaning to refer to compacting test vectors so that there are fewer test vectors required to test a circuit in aggregate. In contrast, the present application uses the industry accepted term "compressed" to refer to compression of a single or set of test vectors to reduce their data volume but not the number of tests needing to be applied. Thus, for example, one could create a set of vectors using Rohrbaugh's approach and to then take these ATPG generated vectors that still contain don't care bits and apply the presently claimed concepts to them to reduce their data volume. Applicant respectfully submits that Rohrbaugh is directed to different tasks than the presently claimed subject matter.

Applicant notes the Office Action's statements regarding Rajski. Applicant notes, however, that Rajski does not teach or suggest filling don't care bits with repeating values. Rajski also does not teach or suggest XORing care bits with a background vector to turn approximately half of the care bits into zeros for the difference vector (see, e.g., claim 3). Such a feature allows the presently claimed subject matter to treat half of the care bits as if they were don't care bits.

Based on the foregoing, Applicant respectfully submits that this application is in condition for allowance, which is respectfully requested.

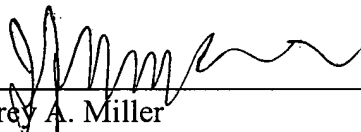
Should the Examiner have any questions or comments on the application, the Examiner should feel free to contact the undersigned via telephone.

Respectfully submitted,

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